|  |  |
| --- | --- |
| Concepts | Articles |
| Concept 1 | 385,745 |
| Concept 2 | 1,516,491 |
| Concept 3 | 4,830,642 |
| Concept 4 | 405,034 |
| Overall | 55 |

**Appendix 1.** Search terms used on **Embase** (1973-2022, 26/11/2022).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Concept 1**: sepsis | AND | **Concept 2**: Neonates | AND | **Concept 3**:Antibiotics | AND | **Concept 4**:Machine learning |
| “sepsis”/exp  | 'newborn'/exp  | 'antibiotic agent'/exp  | 'machine learning'/exp  |
| **OR**  | **OR**  | OR  | **OR** |
| “abdominal sepsis”  | 'child, newborn'  | 'antibiotic'  | 'learning machine'  |
| **OR**  | **OR**  | OR  | **OR**  |
| “focal sepsis”  | 'full term infant'  | 'antibiotic agent' | 'learning machines'  |
| **OR**  | **OR**  | OR  | **OR**  |
| “intraabdominal sepsis”  | 'human neonate'  | 'antibiotic combination'  | 'machine learning'  |
| **OR** | **OR**  | OR | **OR**  |
| “sepsis”  | 'human newborn' | 'antibiotic drug'  | 'deep learning'/exp  |
| **OR** | **OR**  | OR  | **OR**  |
| “sepsis syndrome”  | 'infant, newborn'  | 'antibiotic residue'  | 'deep learning'  |
| **OR** | **OR** | OR  | **OR** |
| “septic disease”  | 'neonate'  | 'antibiotic spectrum'  | 'hierarchical learning'  |
| **OR**  | **OR**  | OR  | **OR**  |
| “bloodstream infection”/exp  | 'neonatus'  | 'antibiotics'  | 'artificial intelligence'/exp  |
| **OR**  | **OR** | OR  | **OR**  |
| “blood infection”  | 'newborn'  | 'antibiotics and their derivatives'  | 'artificial intelligence'  |
| **OR**  | **OR** | OR | **OR**  |
| “blood infections”  | 'newborn baby'  | 'antibiotics, combined'  | 'machine intelligence' |
| **OR**  | **OR**  | OR  |  |
| “blood stream infection”  | 'newborn child' | 'antibiotics, folate antagonists'  |  |
| **OR** | **OR**  | OR  |  |
| “blood stream infections”  | 'newborn infant'  | 'antibiotics, miscellaneous'  |  |
| **OR** | **OR**  | OR  |  |
| “blood-borne infections”  | 'newly born baby'  | 'antibiotics, nitrofuran'  |  |
| **OR**  | **OR**  | OR  |  |
| “bloodstream infection”  | 'newly born child'  | 'antibiotics, oxalodinones'  |  |
| **OR**  | **OR**  | OR  |  |
| “bloodstream infections” | 'newly born infant'  | 'combined antibiotic'  |  |
|  | **OR**  | OR  |  |
|  | 'infant'/exp  | 'antiinfective agent'/exp  |  |
|  | **OR** | OR  |  |
|  | 'infant'  | 'anti bacterial agent'  |  |
|  | **OR**  | OR  |  |
|  | 'baby'/exp  | 'anti bacterial agents'  |  |
|  | **OR**  | OR |  |
|  | 'baby'  | 'anti infective agents'  |  |
|  | **OR**  | OR  |  |
|  | newborns  | 'anti-bacterial agents'  |  |
|  | **OR**  | OR  |  |
|  | 'infants'/exp | 'anti-infective agents'  |  |
|  |  | OR  |  |
|  |  | 'antibacterial'  |  |
|  |  | OR  |  |
|  |  | 'antibacterial agent'  |  |
|  |  | OR  |  |
|  |  | 'antibacterial drug'  |  |
|  |  | OR |  |
|  |  | 'antibacterial spectrum'  |  |
|  |  | OR |  |
|  |  | 'antiinfective agent'  |  |
|  |  | OR  |  |
|  |  | 'antimicrobial'  |  |
|  |  | OR  |  |
|  |  | 'antimicrobial agent'  |  |
|  |  | OR |  |
|  |  | 'antimicrobial compound'  |  |
|  |  | OR  |  |
|  |  | 'antimicrobial drug'  |  |
|  |  | OR |  |
|  |  | 'antimicrobial factor'  |  |
|  |  | OR |  |
|  |  | 'antiseptic'  |  |
|  |  | OR  |  |
|  |  | 'antiseptic agent'  |  |
|  |  | OR  |  |
|  |  | 'chemotherapeutic agent'  |  |
|  |  | OR  |  |
|  |  | 'chemotherapeutic drug'  |  |
|  |  | OR  |  |
|  |  | 'chemotherapeutica'  |  |
|  |  | OR  |  |
|  |  | 'microbiological agent'  |  |
|  |  | OR  |  |
|  |  | 'antiseptics'/exp  |  |
|  |  | OR  |  |
|  |  | 'antisepsis'/exp  |  |
|  |  | OR |  |
|  |  | 'antisepsis'  |  |
|  |  | OR  |  |
|  |  | antibacterials |  |

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| Concepts | Articles |
| Concepts 1 | 5,562,261 |
| Concepts 2 | 1,614,110 |
| Concepts 3 | 2,201,826 |
| Concepts 4 | 234,037 |
| Overall | 37 |

**Appendix 2.** Search terms used on **PubMed** (1992-2022, 26/11/2022).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Concept 1**: sepsis | AND | **Concept 2**: Neonates | AND | **Concept 3**:Antibiotics | AND | **Concept 4**:Machine learning |
| sepsis | newborn | “anti-Bacterial Agents“[mh] | “machine learning“[mh] |
| **OR** | **OR** | **OR** | **OR** |
| septic | infant | antibiotic | “artificial Intelligence”[mh] |
| **OR** | **OR** | **OR** | **OR** |
| bloodstream | neonate | antibiotics | “machine learning” |
| **OR** | **OR** | **OR** | **OR** |
| blood | neonatus | antibacterial | “deep learning” |
| **OR** | **OR** | **OR** | **OR** |
| blood-borne | “newly born” | antibacterials | “artificial Intelligence” |
| **OR** | **OR** | **OR** | **OR** |
| sepsis[mh] | baby | antiseptic | “learning machine” |
|  | **OR** | **OR** | **OR** |
|  | “Infant, Newborn”[mh] | antisepsis | “learning machines” |
|  | **OR** | **OR** | **OR** |
|  | Infant[mh] | antiseptics | “hierarchical learning” |
|  |  | **OR** | **OR** |
|  |  | antiinfective | “machine Intelligence” |
|  |  | **OR** |  |
|  |  | antiinfectives |  |
|  |  | **OR** |  |
|  |  | antimicrobial |  |
|  |  | **OR** |  |
|  |  | antimicrobials |  |
|  |  | **OR** |  |
|  |  | chemotherapeutic |  |
|  |  | **OR** |  |
|  |  | chemotherapeutics |  |

|  |  |
| --- | --- |
| Concepts | Articles |
| Concepts 1 | 5,564,429 |
| Appendix | 1,805,129 |
| Concepts 3 | 1,440,589 |
| Concepts 4 | 976,262 |
| Overall | 37 |

**Appendix 3.** Search terms used on **Scopus** (1966-2022, 14/11/2022).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **concept 1**: sepsis | and | **concept 2**: neonates | and | **concept 3**:Antibiotics | and | **concept 4**:Machine learning |
| TITLE-ABS-KEY(sepsis) | TITLE-ABS-KEY(newborn) | TITLE-ABS-KEY(antibiotic) | TITLE-ABS-KEY(“machine learning”) |
| **OR** | **OR** | **OR** | **OR** |
| TITLE-ABS-KEY (septic) | TITLE-ABS-KEY(infant) | TITLE-ABS-KEY(antibiotics) | TITLE-ABS-KEY(“deep learning”) |
| **OR** | **OR** | **OR** | **OR** |
| TITLE-ABS-KEY (bloodstream) | TITLE-ABS-KEY(neonate) | TITLE-ABS-KEY(antibacterial) | TITLE-ABS-KEY(“artificial Intelligence”) |
| **OR** | **OR** | **OR** | **OR** |
| TITLE-ABS-KEY (blood) | TITLE-ABS-KEY(neonates) | TITLE-ABS-KEY(antibacterials) | TITLE-ABS-KEY(“learning machine”) |
| **OR** | **OR** | **OR** | **OR** |
| TITLE-ABS-KEY (blood-borne) | TITLE-ABS-KEY(“newly born”) | TITLE-ABS-KEY(antiseptic) | TITLE-ABS-KEY(“learning machines”) |
|  | **OR** | **OR** | **OR** |
|  | TITLE-ABS-KEY(baby) | TITLE-ABS-KEY(antisepsis) | TITLE-ABS-KEY(“hierarchical learning”) |
|  |  | **OR** | **OR** |
|  |  | TITLE-ABS-KEY(antiseptics) | TITLE-ABS-KEY(“machine Intelligence”) |
|  |  | **OR** |  |
|  |  | TITLE-ABS-KEY(antiinfective) |  |
|  |  | **OR** |  |
|  |  | TITLE-ABS-KEY(antiinfectives) |  |
|  |  | **OR** |  |
|  |  | TITLE-ABS-KEY(antimicrobial) |  |
|  |  | **OR** |  |
|  |  | TITLE-ABS-KEY(antimicrobials) |  |
|  |  | **OR** |  |
|  |  | TITLE-ABS-KEY(chemotherapeutic) |  |
|  |  | **OR** |  |
|  |  | TITLE-ABS-KEY(chemotherapeutica) |  |